

Clearing

*Many Markets –  
One Clearing House*

e u r e x



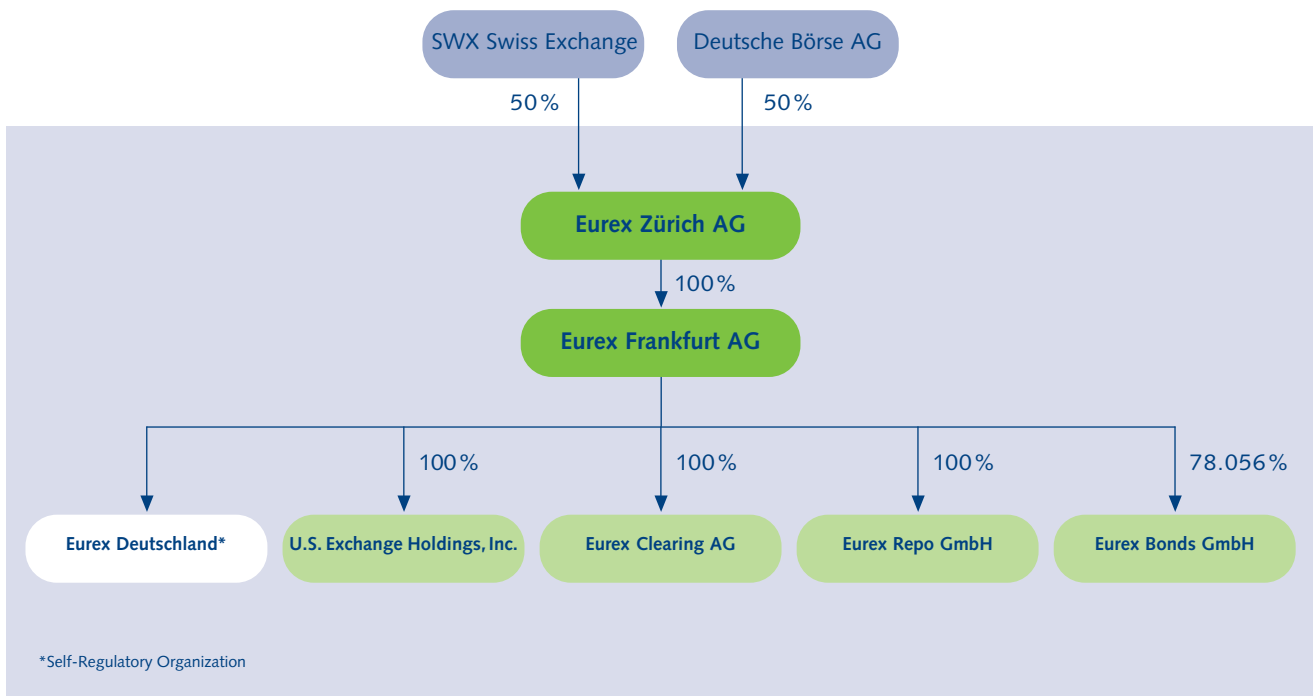
## **Contents**

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- 02 **Organization and Company Profile**
- 03 **Eurex Clearing AG as a Clearing House for International Products and Markets**
- 04 **Simplified Processes Through a Central Counterparty**
- 05 **Enhanced Security for all Participants**
- 05 **Foreign Currency Settlement**
- 05 **Optimum Margin Calculation**
- 06 **Intraday Risk Calculations**
- 07 **Settlement Netting Increases Efficiency**
- 08 **Membership Throughout Europe**
- 09 **Membership Requirements**
- 11 **Access to Eurex Clearing AG**
- 12 **Sales Contacts**

## Organization and Company Profile

Eurex Clearing AG was founded in 1998 as a wholly owned subsidiary of Eurex Frankfurt AG. It was created as the result of the merger of the two derivatives exchanges, DTB Deutsche Terminbörse and SOFFEX (Swiss Options and Financial Futures Exchange). The two derivatives exchanges already had integrated trading and clearing systems prior to 1998. After the Eurex Exchanges were established, Eurex Clearing AG expanded its services from derivatives clearing only additionally to other products such as equities, bonds and repo trades.



## Eurex Clearing AG as a Clearing House for International Products and Markets

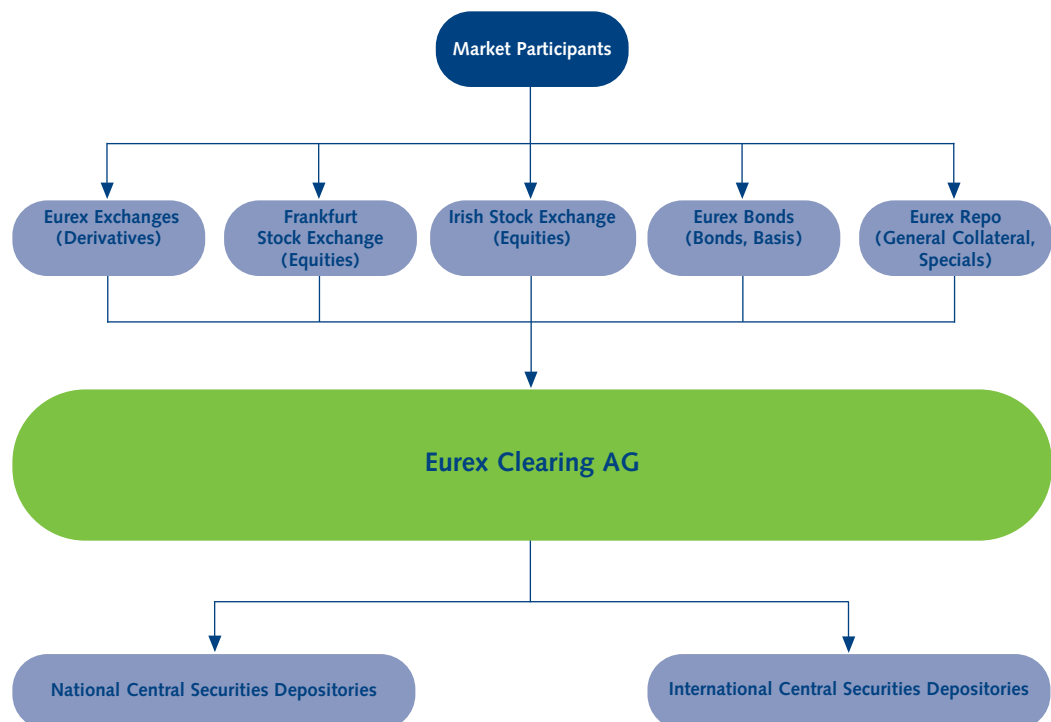
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Eurex Clearing AG has been pursuing three key objectives ever since its foundation:

1. Continual expansion of its products and product range
2. Expansion of the markets in which Eurex Clearing AG acts as a central counterparty
3. Process harmonization across the various asset classes

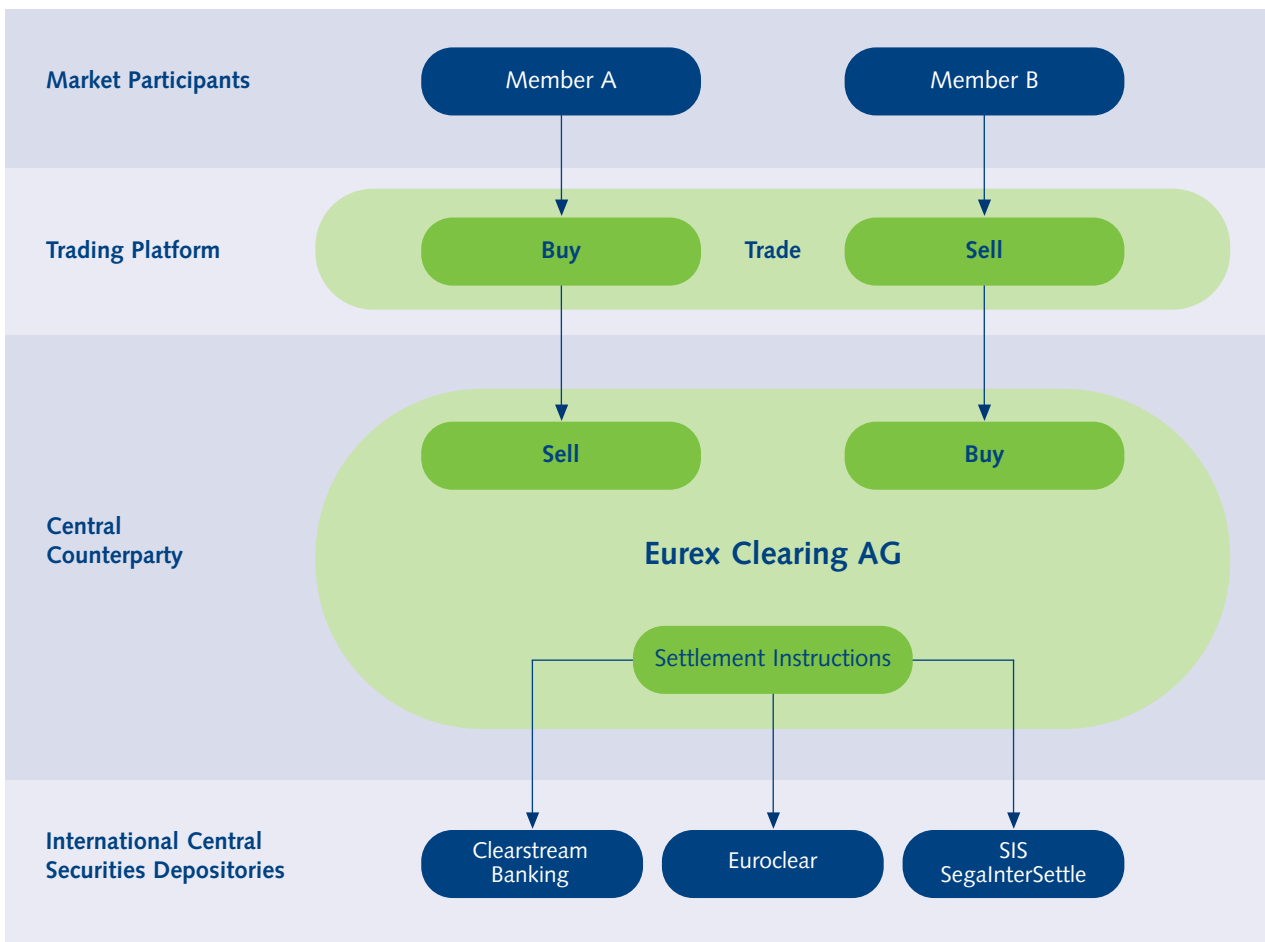
In addition to providing clearing services for futures and option contracts, the product portfolio of Eurex Clearing AG also includes clearing services for transactions resulting from Eurex Bonds GmbH and Eurex Repo GmbH, as well as for the majority of all transactions on FWB® Frankfurter Wertpapierbörse (the Frankfurt Stock Exchange).

Since November 2005, Eurex Clearing AG has also been acting as a central counterparty for transactions performed on the Irish Stock Exchange (ISE). In close cooperation with Euroclear/CRESTCo Limited, a clearing service was introduced which is perfectly tailored to the requirements of the domestic market and makes efficient use of the structures established there. The product range includes Irish equities and exchange-traded funds (ETFs), which are traded in euro in the Xetra® order book on the Irish Stock Exchange. The benefits to the client are obvious: less tied-up capital, increased security and greater settlement efficiency.



## Simplified Processes Through a Central Counterparty

When transactions are executed, Eurex Clearing AG, as clearing house, automatically becomes the central counterparty, i.e. the buyer for each seller and the seller for each buyer. In turn, Eurex Clearing AG is directly linked with a whole range of international CSDs. This implies that the clearing house not only assumes the counterparty risk for all market participants, but also simplifies settlement processes for the clearing members, whilst at the same time guaranteeing post-trade anonymity from trading to settlement.



## **Enhanced Security for all Participants**

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Since Eurex Clearing AG guarantees the fulfillment of all traded contracts, a multilevel security system has been established. The mainstay of the security system is the calculation of total risk exposure for each clearing member (margin) which is covered by the deposit of collateral in the form of cash or securities. Coverage applies not only to those losses calculated based on current prices, but also to future potential price risk, so that no collateral shortfall should arise prior to the next calculation of margin requirements. This daily provision of collateral is supplemented both by contributions to the clearing fund, which are mandatory for each clearing member, and by reserves maintained by Eurex Clearing AG. This provides the clearing house with an adequate buffer to effectively counter any potential default on the part of a clearing member. Should a clearing member delay payment or delivery, Eurex Clearing AG has defined a clear procedure to guarantee minimal risk and adequate settlement.

## **Foreign Currency Settlement**

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Eurex Clearing AG supports settlement in various currencies. In addition to the existing trading and settlement of products denominated in EUR and CHF, additional trading products denominated in USD and GBP are already being planned and prepared for settlement processes. Additional currencies can be included in the clearing system. Collateral may, of course, be deposited in the form of securities denominated in the trading and settlement currencies.

## **Optimum Margin Calculation**

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Eurex Clearing AG's Risk-based Margining<sup>1</sup> encompasses the entire process of measuring, calculating and administering the margin required for open positions in order to cover any contractual risks that may arise. This provision of collateral guarantees that all open positions belonging to a clearing member can be closed and offset within a short period of time.

The margins required for deposit are reviewed for each member on a daily basis, since new positions may have been created during the trading day and existing positions closed out through offsetting transactions. Daily adjustments of margins are smoothly facilitated as standardized contracts allow continuous price monitoring. The profits or losses arising from the day's price fluctuations are either settled with cash (Variation Margin) or in the form of margin deposited with Eurex Clearing AG (Premium Margin).

<sup>1</sup> A detailed description of margin calculations including concrete examples can be obtained in Eurex Clearing AG's "Risk-based Margining" brochure.

## Intraday Risk Calculations

Eurex Clearing AG also offers an intraday risk information service on the basis of its Risk-based Margining, upon request. This service facilitates virtually real-time calculation of the current market risk relating to open positions up to member level. Clearing members can use this to counter increased margin requirements using intra-day, risk-adequate collateral provision.

Moreover, in the case of an anticipated adverse price movement within 24 hours, an Additional Margin is imposed. This margin is calculated separately according to whether proprietary trading or client positions are concerned (P and A accounts).

All products with the same risk potential are categorized in distinct margin classes. In turn, several margin classes with a similar risk structure may be grouped together in margin groups. In both the margin classes and margin groups, risks that offset each other are eliminated from the calculation (cross margining), so that members are required to provide significantly less in collateral than if the products were valued separately. Thus, a liquidity-preserving margin is calculated for all product segments (for example bonds or futures and option products) for which Eurex Clearing AG acts as central counterparty.

### Market-wide Risk-based Margining

Sample calculation Additional Margin Eurex Bonds: Long Bundesanleihe v.01/11					
Margin Class	Downside	Upside	Adj. Downside	Adj. Upside	Add. Margin
Bundanl. v.01/11	4,200,000	-4,200,000	4,200,000	0	4,200,000
<b>Total</b>					<b>4,200,000</b>

The loss potential is indicated with a positive sign, while a positive price development is marked with a negative sign.

Sample calculation Additional Margin Eurex Exchanges: Short Euro-Bobl Futures					
Margin Class	Downside	Upside	Adj. Downside	Adj. Upside	Add. Margin
FGBM	-3,500,000	6,100,000	0	6,100,000	6,100,000
<b>Total</b>					<b>6,100,000</b>

If each market were considered separately, the risk position would yield a total margin requirement of EUR 10.3 million.

Sample calculation Cross Margin Eurex Bonds/Eurex Exchanges					
Margin Class	Downside	Upside	Adj. Downside	Adj. Upside	Add. Margin
Bundanl. v.01/11	4,200,000	-4,200,000	4,200,000	0	0
FGBM	-3,500,000	6,100,000	0	6,100,000	6,100,000
<b>Total</b>					<b>6,100,000</b>

In this example, a maximum potential loss of EUR 4.2 million is calculated for the government bond (Bundesanleihe v.01/11) in a falling market. For the short position in the Euro-Bobl Futures contract (FGBM) on the other hand, a maximum loss of EUR 6.1 million is anticipated in a rising market. This amount represents the maximum loss which arises through the contrary profit and loss potential when considering both markets and therefore is calculated as Additional Margin. Cross margining therefore reduces the margin requirement by EUR 4.2 million.

## Settlement Netting Increases Efficiency

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Settlement netting for products traded on all connected trading platforms results in a considerable reduction in the number of delivery instructions and associated costs. In addition, automation and straight through processing on the part of members will be supported and promoted.

## Membership Throughout Europe

Companies become **General Clearing Members (GCM)** or **Direct Clearing Members (DCM)** of Eurex Clearing AG in applying for one or more clearing licenses. The following clearing licenses may be selected:

Clearing License	Cleared and settled products
Derivatives Clearing License	Fixed Income Derivatives Money Market Derivatives Equity and Equity Index Derivatives Exchange Traded Funds® Derivatives Volatility Index Futures Futures leg of basis trades <sup>2</sup>
Bonds Clearing License	German government bonds German Jumbo Pfandbriefe Issues of the Kreditanstalt für Wiederaufbau (Reconstruction Loan Corporation), the European Investment Bank and the German States Selected European government bonds, corporate bonds and covered bonds Securities leg of basis trades <sup>2</sup>
Repo Clearing License	General Collateral and Special Repo on: German government bonds German Jumbo Pfandbriefe Issues by the Kreditanstalt für Wiederaufbau and German States Austrian government bonds Selected European corporate bonds and covered bonds
Equity Clearing License (FWB)	German and international shares that are traded on the FWB floor or via Xetra®
Equity Clearing License (ISE)	Irish Stock Exchange Xetra® order book transactions in Irish shares and Irish exchange traded funds (ETFs)

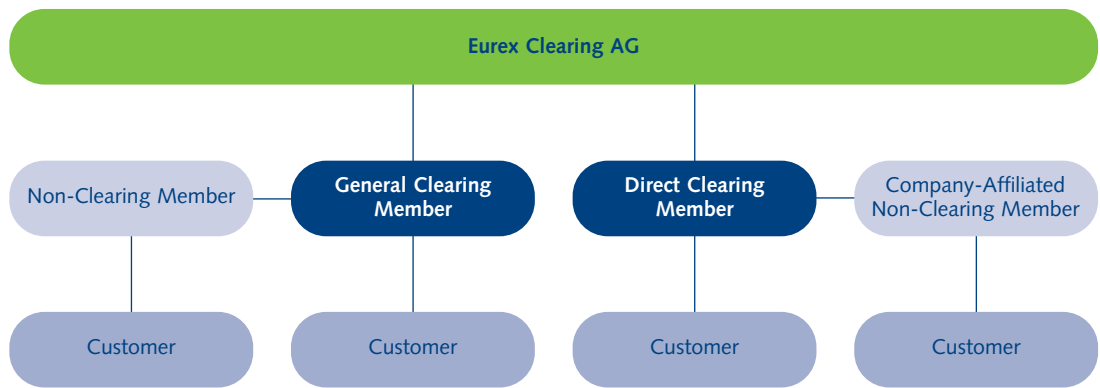
Market participants with no clearing status (so-called **Non-Clearing Members – NCMs**) must enter into a clearing agreement either with a GCM or a company-affiliated DCM. Accordingly, clearing members (GCMs and DCMs) may clear their own transactions, those of their clients, as well as those of NCMs. NCMs may enter, exercise and close their own orders as well as those of their clients online. The system also provides a continuous overview of the payment and delivery obligations arising from their trades.

NCMs may enter into agreements with different clearing members on a per trading platform basis (for example Eurex Exchanges, FWB, ISE, Eurex Bonds GmbH et cetera). In this case, the NCM cannot take advantage of cross margining. As a rule, however, business transacted on a specific trading platform, such as the Eurex Exchanges, may only be settled through a single clearing member. The transfer of business to other members by means of the “give-up/take-up” functionality is not affected by this.

<sup>2</sup>The basis trade is a combination of a security and futures contract, which has a price of its own. The purchase of a basis trade implies the purchase of a certain amount of securities and the simultaneous sale of the corresponding amount of futures contracts.

Since there is no contractual relationship between the NCMs and Eurex Clearing AG, transactions are essentially concluded between Eurex Clearing AG and a given clearing member, and in turn between that clearing member and the respective NCM. Margin deposits or fee payments, for example, are always made to the clearing house via the contractually stipulated clearing member.

### Contractual Relationship Upon Conclusion of a Business Transaction



## Membership Requirements

Any company domiciled in the European Union and Switzerland may apply for a clearing membership at Eurex Clearing AG. The applicants must be authorized and entitled by their respective regulatory authorities to operate in the custody and loan business as well as to accept receipt of margins in the form of cash or securities. In addition, clearing members must show evidence of a certain minimum level of liable capital and must pay a contribution to Eurex Clearing AG's clearing fund.

### Liable Capital Requirements

Clearing License	General Clearing Member (GCM) in millions of EUR	Direct Clearing Member (DCM) in millions of EUR
Derivatives Clearing License <sup>3</sup>	125	12.5
Bonds Clearing License <sup>3</sup>	50	5
Repo Clearing License <sup>4</sup>	175	17.5
Equity Clearing License	25	2.5

<sup>3</sup> Capital for which evidence has already been provided in connection with the Repo Clearing License is included in the calculation of liable capital.

<sup>4</sup> Capital for which evidence has already been provided in connection with the Derivatives Clearing License and Bonds Clearing License is included in the calculation of liable capital.

Irrespective of the aforementioned minimum levels of liable capital required of an institution, the actual level of liable capital to be proven and maintained is either ten percent of the 30-day average of the total margin requirement or ten percent of the 250-day average of the total margin requirement of the respective clearing member, whereby the higher amount of the two calculated as described above applies.

Evidence of the liable capital as of December 31 must be provided annually by the clearing member. Such evidence must be presented no later than six months after the aforementioned reporting date.

The level of contributions for Eurex Clearing AG's clearing fund also depends on the status of the clearing member. Currently, GCMs pay a minimum of EUR 5 million and DCMs a minimum of EUR 1 million into the fund. In the event that two percent of the average total margin requirement of the clearing member for the last 30 days or 250 days is greater than these minimum contributions, this amount has to be paid into the clearing fund. With the exception of the Equity Clearing License, contributions already paid into the fund for other clearing licenses are taken into account.

Additional admission requirements include proof of securities and pledged securities accounts and cash accounts. Through the distinct proof of a securities deposit account the domestic central securities depository is considered in accordance with local market practices. Correspondent banks can be used for the settlement of securities as well as for cash clearing. It is possible to use several deposit accounts for each central depository.

## Access to Eurex Clearing AG

Clearing members require access to the clearing systems of Eurex Clearing AG, whose functionalities are implemented on two back-ends.

The functionalities required for risk management and collateral management are available on the Eurex back-end. In addition, Eurex Clearing AG offers an electronically supported delivery management for the automated disposition of CCP-related transactions.

### Clearing Licenses and Systems of Eurex Clearing AG

<b>Markets</b>	Eurex Exchanges	Eurex Bonds & Eurex Repo	Frankfurt Stock Exchange (FSE)	Irish Stock Exchange (ISE)
<b>Clearing Licenses</b>	Eurex Derivatives Clearing License	Eurex Bonds Clearing License Eurex Repo Clearing License	FSE Equity Clearing License	ISE Equity Clearing License
<b>Risk- and Collateral Management</b>	<b>Eurex® System</b>			
<b>Delivery Management</b>	<b>CCP Platform</b>			

Technical connection to the clearing systems of Eurex Clearing AG is performed via the Member Integration System Server (MISS) or the clearing member's MISS groups and the Eurex Clearing AG network to the relevant back-end. A bandwidth is defined for the respective clearing license and technical connection is obtained either via leased lines, an Internet connection or a combination of the two. Sun Solaris, Microsoft Windows 2003 and Microsoft Windows XP (only for workstations) can be used as standard platforms.

Detailed information on the connection portfolio for the individual clearing licenses as well as the respective price lists can be accessed via the website: [www.eurexchange.com](http://www.eurexchange.com).

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